REMARKS

The Present Invention

The present invention relates to a cerium oxide particulate composition.

Summary of the Office Action

The Office Action rejects claims 34 and 36-52 as defining subject matter that allegedly lacks novelty under 35 U.S.C. § 102(b) in view of U.S. Patent 4,713,233 (Marsh et al.) (hereinafter "the Marsh '233 patent"). Applicants respectfully traverse the rejection.

Discussion of the Anticipation Rejection

The Office Action asserts that the Marsh '233 patent discloses cerium oxide particles having a high pore volume, large surface area, and small particle size. The Office Action further asserts that the cerium oxide particles are loosely agglomerated primary particles and/or aggregates of primary particles having a spherical form at the aggregate and primary particle level.

Contrary to the Office Action's assertions, the Marsh '233 patent does not disclose or suggest all of the elements recited in the pending claims. The pending claims recite a cerium oxide particle composition comprising aggregates consisting essentially of approximately spherical primary particles of cerium oxide, *wherein the aggregates comprise a mixture of cenospherical and aciniform aggregates*. As defined in the present specification, aciniform aggregates are branched, three-dimensional, chain-like aggregates of essentially spherical primary particles, and cenospherical aggregates are aggregates of primary particles having an approximately spherical shape and at least one hole that is visible via electron microscopy (see, for example, the present specification at page 6, lines 9-14).

By way of contrast, the Marsh '233 patent fails to disclose or suggest a cerium oxide particle composition comprising either *cenospherical aggregates* or *aciniform aggregates,* let alone a mixture of these two types of aggregates. The Marsh '233 patent discloses inorganic metal oxide compositions consisting of loosely agglomerated primary particles and/or aggregates of primary particles having a generally spherical form at the aggregate and primary particle level. While the Marsh '233 patent discloses a particle composition comprising aggregates having a generally spherical form, the Marsh '233 patent does not disclose or suggest a cerium oxide particle composition comprising *cenospherical aggregates* (i.e., aggregates of primary particles having an approximately spherical shape and at least one hole that is visible via electron microscopy). Indeed, as evidenced by Figures 2A and 2B of the Marsh '233 patent, the particles of the Marsh '233 patent have a substantially uniform,

continuous surface. Furthermore, the Marsh '233 patent fails to even mention holes or discontinuities in the surface of any spherical aggregates, much less disclose or suggest an aggregate having an approximately spherical shape and at least one hole that is visible via electron microscopy (i.e., a cenospherical aggregate). Accordingly, the Marsh '233 patent fails to disclose or suggest a cerium oxide particulate composition comprising *cenospherical aggregates* as required by the pending claims.

Moreover, while the Marsh '233 patent discloses a particulate composition comprising *agglomerates* of two or more primary particles, the Marsh '233 patent does not teach or suggest *aggregates* having a three-dimensional, chain-like structure. Indeed, the Marsh '233 patent specifically provides that the *aggregates* have a generally spherical form (see, the Marsh '233 patent at col. 6, lines 44-48). Therefore, contrary to the Office Action's assertions, the Marsh '233 patent cannot properly be considered to disclose or suggest a cerium oxide particulate composition comprising *aciniform aggregates*, because such an assertion is in direct contradiction to the Marsh '233 patent's disclosure regarding the shape of the *aggregates*. Furthermore, the portion of the Marsh '233 patent cited by the Office Action in support of the assertion that the Marsh '233 patent discloses a cerium oxide particulate composition comprising aciniform aggregates actually is describing the possible shape of the *agglomerates* contained within the disclosed particulate composition. As stated in the Marsh '233 patent, the term *agglomerates* is used to refer to a collection of either primary particles or aggregates that are held together by relatively weak cohesive forces (see, for example, the Marsh '233 patent at col. 6, lines 48-51). The pending claims, however, require that the cerium oxide particulate composition comprise *aciniform aggregates*. These aggregates are a dense mass of primary particles that are held together by relatively strong cohesive forces (see, for example, the Marsh '233 patent at col. 6, lines 54-57, and the present specification at page 7, lines 7-8). Thus, the portion of the Marsh '233 patent relied upon by the Office Action actually is describing generally spherical particle *agglomerates* that are significantly different in structure than the *aciniform aggregates* recited in the pending claims. Accordingly, the Marsh '233 patent fails to disclose or suggest a cerium oxide particulate composition comprising *aciniform aggregates* as required by the pending claims.

Accordingly, the Marsh '233 patent fails to disclose censospherical aggregates. The Marsh '233 also fails to disclose aciniform aggregates. Since a mixture of cenospherical and aciniform aggregates is required by the pending claims, the Marsh '233 patent cannot properly be considered as disclosing the present invention as defined by the pending claims. The failure of the cited reference to disclose all of the elements recited in the pending claims

means that the Section 102(b) anticipation rejection over the Marsh '233 patent is improper and should be withdrawn. Moreover, the Marsh '233 patent does not suggest the modification or replacement of the generally spherical aggregates with either cenospherical or aciniform aggregates, let alone a mixture of these two forms of aggregates. Thus, a Section 103 obviousness rejection based on the Marsh '233 patent would not be proper.

Conclusion

The application is considered in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

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